

# Bit Extension Shafts for Drills and Screw Guns

## The Problem

If you use a drill or screw gun for overhead work, you are forced to keep your arms and neck in fixed, awkward, hard-to-hold positions. You have to push upward with a heavy tool above your shoulders, using your shoulder muscles instead of your biceps.

This work can put stress on your arms, neck, shoulders, and back. It can lead to fatigue and serious muscle or joint injuries.

*Problem: Drilling overhead*



## One Solution

Use a **bit extension shaft** for the drill or screw gun, so you can hold the tool below your shoulder and closer to your waist.

You strain your arms, neck, shoulders, and back less because you don't have to hold the tool above your shoulders or work in an awkward position. You work with your upper arms held close to your sides, and your hands in front of your body. You are pushing with your biceps muscles instead of your shoulders.

*Solution: Using extension*



## How It Works

The extension is like a normal socket, but longer. It can be made from carbon steel tube stock. One end of the tube is welded to a piece that fits into the drill or screw gun chuck. An impact socket is welded onto the other end of the tube. A bit can then be

inserted into the socket. PVC pipe is used as a sleeve over the extension. Part of the PVC pipe slides over the bit. The sleeve protects your hands from the spinning shaft and gives you better control of the tool. You hold the tool with one hand and the sleeve with the other.

Extensions are available from several manufacturers in many different lengths and diameters. Lengths generally run from 12 to 40 inches. It is also possible to make your own extension. Before using an extension for drilling or fastening, you should determine whether it is appropriate for the job.

## Benefits for the Worker and Employer

Bit extensions should reduce a worker's chance of developing muscle and joint injuries. Workers benefit from not having to hold a heavy tool above their shoulders for long periods. The extension itself weighs less than two pounds. Using the extension is easy after a little practice. One company that uses the extensions says that their workers like the way the extension prevents shoulder strain.

However, an extension does not solve the problems caused by holding your neck tilted back to look up at your work. To cut down on neck strain, avoid looking up when you don't have to. To be safe, make sure you push the extension onto the drill chuck tightly, before you turn on the power. In a screw gun, the screw must also be tight in the bit.

## Approximate Cost

You can make your own bit extension, which will cost \$1–2 for materials plus labor. Manufactured bit extensions cost from approximately \$12 for a 12-inch model to \$45 for a 24-inch model.

## For More Information

- Products related to this solution are described at [www.cpwr.com/simple.html](http://www.cpwr.com/simple.html). Products also may be found on the internet using the following search terms: “bit extension shaft.”
- Local contractor tool and equipment suppliers or rental companies may be another source of information on products.
- For general information on this solution, check [www.cpwrconstructionsolutions.org](http://www.cpwrconstructionsolutions.org) and [www.elcosh.org](http://www.elcosh.org).